

IDO:Flexible VDP is the only solution for the simulation of cables and hoses. Have a deeper look at this innovative application.

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The ICIDO SUMMIT 07 showed one main focus in the next years: Integration of Virtual Reality into the business processes

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## ICIDO and VRCom announce Merger

*Combination Creates one of the leading Vendors for Immersive Software Solutions for Virtual Product Development*

ICIDO GmbH and VRCom GmbH, two pioneers of advanced Virtual Reality solutions, today announced that they will merge. The business combination will establish the joint entity as one of the world's leading vendors of immer-



**IC:IDO**  
The Visual Decision Company.

sive software solutions for virtual product development. The companies'

combined product portfolio provides a comprehensive, "best-in-class" application suite for virtual product analysis and validation in 3D immersive environments, enabling customers to substantially enhance and accelerate their product innovation and development processes. The merged entity expects to generate substantial revenue growth.

Virtual product development methods are increasingly being adopted within manufacturing industries. Associated customer benefits are well understood: Improved product innovation, enhanced design quality, compressed development cycles and substantially reduced costs, realized across the entire product development process.



However, until today market-driving OEMs were forced to deal with competing standards and individual point solutions, especially with regards to advanced Virtual Reality and visualization solutions.

The merger of ICIDO GmbH, a provider of interactive visual decision systems, and VRCom GmbH, a pro-

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## ICIDO SUMMIT 07 showed the future

With more than 150 participant the ICIDO SUMMIT 07 was one the world's important events around Virtual Reality and Visualisation. Around 75% of the visitors came from the industry and made this event to a show of the practicability of the Virtual Reality concept.

Together with partners like Sony, nVidia, Trivit, Industriebansa and other ICIDO presented

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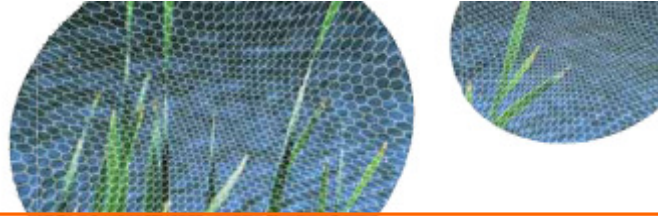


James Oliver of IOWA State at his presentation

### Impressum IDO:Communicate

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## Dear customers and friends,

This autumn started with an important strategic decision. We decided to merge with vrcom to create one of the World's leading providers of immersive software solutions for virtual product development. Together the both companies has an installation base of more than 300 Virtual Reality solutions worldwide and can provide the complete international support. This is one of the main topics in this second edition of the English version of IDO:Communicate. The second one is the successful ICIDO SUMMIT 07.



In this edition, we used much of your feedback for optimization. Additionally, several of our partners' contributions have been integrated in this edition, which broadens the spectrum of topics significantly. And one more thing has changed since the last edition: We got a lot of new subscribers and we are proud that this issue will be read by more than 1500 people worldwide!

In my opinion, the most important article in this issue is the one about the technology of IDO:Flexible, one of the world's most innovative Virtual Reality products in the last years. This product not only generates a huge interest within the range of our customers, but it also has won the ICT Prize of the EU in 2006. The European ICT Prize is the most distinguished prize for innovative products and services in the field of ICT.

Above all it shows that ICIDO is always anxious to follow and consider all of its customers' desires.

Ralf Heimberg

*(continuation from page 1)*

vider of virtual prototyping software solutions, creates one of the world's leading vendors of immersive software solutions for virtual product development. The integration of the two companies' product lines will offer customers a comprehensive application portfolio ranging from desktop-based visualization up to cluster-based high performance solutions for best-in-class virtual product analysis and validation in 3D immersive environments. The combined entity targets the major growth markets in Europe, USA and Asia, serving clients in all manufacturing industry segments, with the main focus on automotive, aerospace, defense and transportation as well as mechanical engineering industries. The merger positions the joint entity well to continue to lead this rapidly evolving market and generate strong revenue growth.

"The merged entity will offer our customers a more powerful and comprehensive solution set for product development, design and engineering. At the same time, customers will benefit from our expanded service and support

offerings as well as our global presence", explains Ralf Heimberg, CEO of the merged company. He continues: "We believe we can play a major role in shaping and setting the future standards for virtual and immersive product development solutions".



Christian Matzen (COO) and Ralf Heimberg (CEO)  
(Source: CAD.de)

Christian Matzen, COO of the combined entity and in charge of R&D, adds: "The consolidation of the two product lines will deliver substantial value to our customers by bringing together best-of-breed functionalities in one product. The merger will also free up development capacities, which will enable us to more effectively meet our customers' requirements with regard to innovation and product quality."

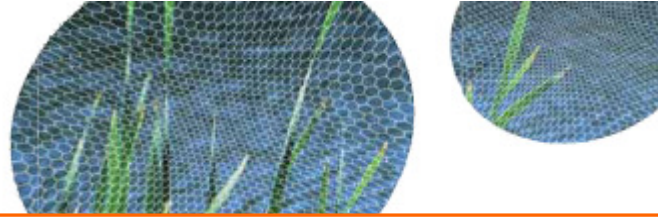
The joint entity will operate under the ICIDO brand. Corporate headquarters are located in Stuttgart with subsidiaries in Darmstadt, Cologne, Hamburg and Chicago, IL, USA. The merger is subject to approval by antitrust authorities.

## New Consulting Services

The integration of the software in the business processes of a company plays an important role for the success. In consequence that means that we need to understand the business processes. So ICIDO decided to implement a consulting department. Consulting offers thereby many advantages to

you: on-site support, short implementation times or on-the-job training. Consulting also means that additional advantages for both parties: good communication, feedback loops and faster answers and perfect fitted solutions.

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The complete process of virtual product development as a whole. As in previous years, during this year's ICIDO summit international industry and research experts present their speeches and experiences in using the VR-technology and about the current state of research.

What is so special about the ICIDO Summit is its exclusive focus on applications and convenience. Every year representatives of the leading industries using VR, applied research, hardware suppliers and providers of complementary software products in the field of Visualisation, Virtual Reality, PLM and Engineering meet here for an intensive exchange of experiences. In this year the presentations of Airbus, Rheinmetall Defence or Fraunhofer gained a huge interest.



Interested visitors at one of the presentations

One topic dominated all of the presentation and the surrounding exhibition: the integration of virtual reality in the business processes. And the ICIDO SUMMIT 07 showed that the time is right for integration with PLM and PDM as well as with CAD systems. And it demonstrated the possibility of this integration. The exhibition



Ulrich Häfner of imsys at a live demonstration of IDO:Cooperare.

was organised around a complete development process starting at the construction with CAD software over visual verification with Virtual Reality to Immersive Selling and Marketing with 3D and Virtual Reality solutions.

Beside the Merger with vrcom which was announced at the SUMMIT 07 and its consequences ICIDO presented all of the latest product versions and modules of

its Visual Decision platform. ICIDO also showed new products like IDO:Cooperate which allow for worldwide cooperation on virtual product development.

As a very special guest James Oliver of the IOWA State University discussed the worldwide trends of visualization and Virtual Reality in his exiting presentation. And he showed that there are many potential applications of virtual reality beside the focus on development and construction. So he talked about medicine and chemicals as well as geography. And he demonstrated that the new virtual reality CAVE at the IOWA state in his visualization capabilities is near to the reality.

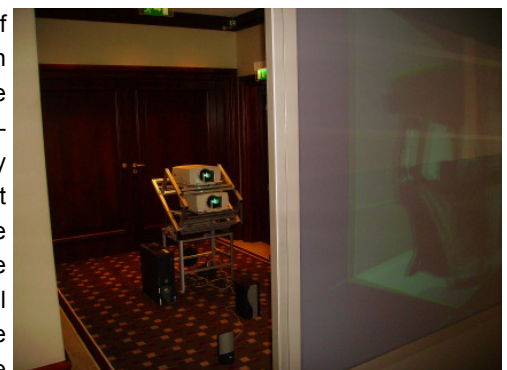
In the exhibition the partners nVidia, Sony, Industriebahn, imsys, xPLM, trivit, spaceclaim, visenso, lumographics, 3DMadness, IPEQ and vrcom demon-



The ICIDO SUMMIT 07 showed the latest trends in visualization and virtual reality technology.

strated their joint solutions or additional products.

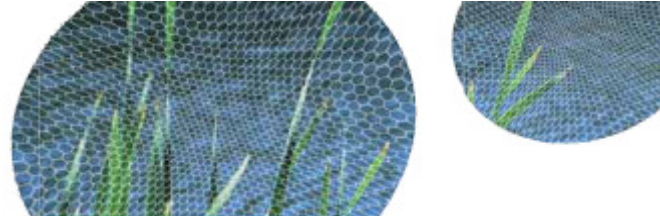
The overall feedback of this year's SUMMIT was tremendous. The rating of the whole event was at 1.96 where 1 is the best and 6 was the weakest. And also the personal feedback of the participants rated the SUMMIT 07 as good investment of time and money, as chance to get the latest information on visualization and virtual reality and as a opportunity to meet all the main



The technology behind: standard PC, standard beamer, tracking system and a presentation wall.

users and providers of visualization solutions.

In the next year the ICIDO SUMMIT 08 will extend its focus on practice and will provide more practical implementations. And the event will become more international with an complete international track.

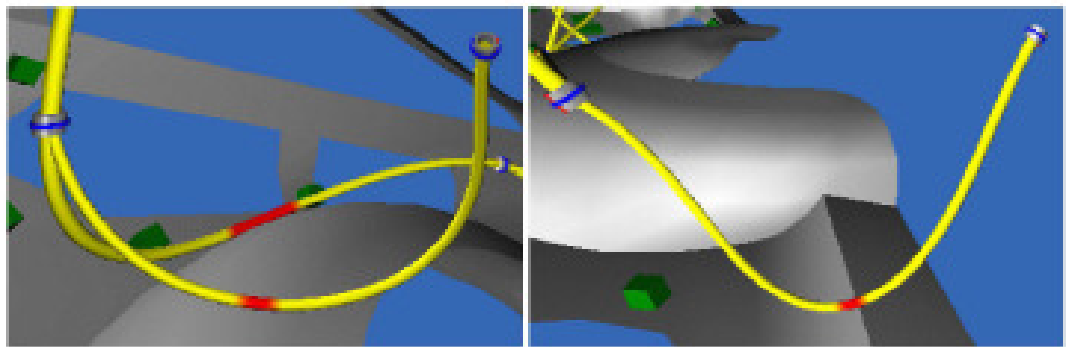


## Simulation and Visualisation of flexible Parts

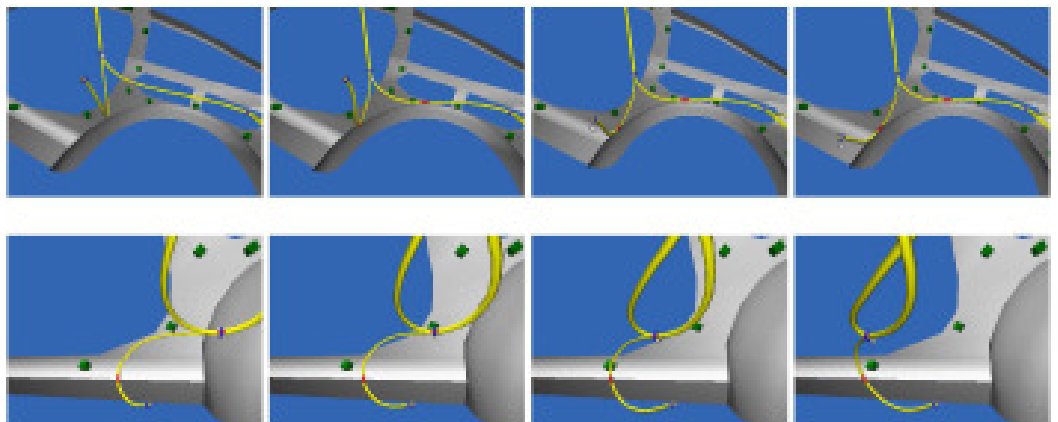
To consider physical cable properties in the digital design phase of a product helps to detect design problems, such as those caused by small bending radii. It also helps to determine production requirements, such as cable lengths and the respective allowed tolerances. This analysis significantly reduces the costs for physical mock-ups. IDO:Flexible VDP is the only solution for the simulation of cables and hoses combining high precision with interactive update rates on commodity PCs.

While the simulation of rigid geometry to determine the assembly of a product is already prevalent in practice, the interactive simulation of the physical behaviour of compliant parts has not been commercially available by now,

radii as well as the detection of situations when contact or collisions of compliant with rigid parts occur. All of these applications do not only demand a plausible simulation but physical correctness, i.e. the numerical solution



A highly accurate, physically correct numerical simulation of flexible cables and hoses with circular cross-section has been achieved for real-time interactive applications. Non-uniform material composition is supported including multi-core, shielded or isolated cables, braided or multi-layered hoses. Arbitrary connections of cables among each other and with rigid geometry are provided. Collision detection and contact simulation enable us to reproduce complex nonlinear behaviour of cables/hoses in contact with arbitrary shaped rigid geometry. As a result, wiring harnesses with multiple branches can be modelled in a rigid environment and tested in real-time, allowing for digital mock-ups and enhanced product design.



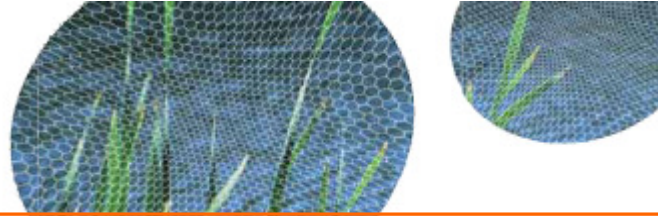
*Cable under contact in a virtual environment. Contacting regions are depicted in red colour. The example shows that our approach can deal with non-smooth contact geometry (above right and below).*

although it has been requested by the automotive industry for many years. Cables, hoses and wiring harnesses essentially stand out in automobile production as to their frequent occurrence and complex non-linear elastic behaviour. The basic question is cable and wire routing. Primary applications in routing assistance are the determination of required cable lengths and their respective tolerances or the detection of problems like small bending

of known laws from continuum mechanics is needed. Interactivity, on the other hand, requires fast computation.

IDO:Flexible solve any of these challenges and can be used in all areas of an enterprise that deal with the design, planning, engineering, development and processing of flexible components.

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## More simply and faster to the visual decision

With its Visual Decision Platform (VDP) ICIDO has established an application platform, which not only enables product visualization and - treatment in real time and genuine size, but beyond that also supports the entire digital product development cycle from the concept up to service and maintenance. Therefore, errors can be uncovered in very early development phases, problems in the assembling are recognized earlier and costly expirations of maintenance are avoided.



has been consistently developed with the focus on simple usability, fast performance and universal applicability in different industries. This service pack is available to all prospective customers immediately.

ICIDO also offers a wide range of know-how as consulting partner. „If you look at the errors and

failures that may happen during the product development process, you

wonder why many enterprises still work without using an interactive visualization solution like the VDP. There is no difference whether these failures can be repaired prior to the product distribution or not, the costs are always there.“, Ralf Heimberg, managing director of ICIDO says and he goes on to say „Many enterprises promote zero-error politics and look for possibilities of supporting and of accelerating decisions visually. With the service Pack 3 we offer a simple to use and easy to integrate solution for visual decisions . We now also support the interfaces of the JT-open consortium, to which we have become a member recently.“

The service pack 3 of the VDP, which has been launched several weeks, ago,

failures that may happen during the product development process, you

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## Avoiding errors in real time

Errors in products are increasingly turning into a critical variable in a company's balance sheet. Every week, the European Commission and its consumer protection department publish a balance of all recalled and defective products in Europe. Since the beginning of the year 2007, the European Commission has listed more than 400 articles that were officially recalled. It is assumed that the number of unreported cases is much higher. These include a large number of brands that are not so well known, but also well known brands. In the actual case: Mat-tel. The consequences are obvious: the costs of information, drops in sales and dwindling customer trust. The bandwidth of defects is manifold. Defect categories range from poor material quality through the use of toxic chemicals to engineering errors.

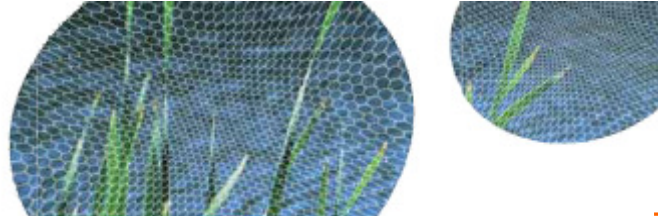
Many of these errors could be avoided in advance. Not only does consistently implemented quality management help, but also, among other things, early visualisation of digitally created products in real time and size by means of virtual reality (VR) technology. companies. With the Visual Decision Platform ICIDO has established an application platform that not only enables product visualisation and processing in real time and size, but also supports the entire digital product development cycle from the idea to after-sales service. Thus, not only can errors or weak spots be detected in very early stages



Some of the recalled products in 2006. © European Community 2007

of development, problems during assembly or complex maintenance sequences can also be avoided.

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## Look into the Future of the VDP

The recently published Roadmap of ICIDO provides more transparency and planning reliability. In this roadmap customers will find the products and functions that can be expected in the next 12 months' Software releases. All of them are described in detail and are specified in a schedule. Right now all

functions of the VDP 2007, which will be released in the last decade of the year, are approved.

Customers and prospective customers, who would like to have a look at the Roadmap, are welcome to contact ICIDO and to receive a comprehensive consultation about the functions and

characteristics of the different releases. With the roadmap customers are in a position to anticipate the VDP Software releases and to obtain reliability about the expected functions.

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## Tip No 2: Stereoscopic pictures with the VDP

Quite often it is difficult to demonstrate the potentials of the spatial presentation of products. For that the use of red-green or red-blue stereoscopic pictures are one easy solution. They can serve as a first illustration of a product or give the viewer a first impression of spatial seeing. With the VDP these pictures are produced as fields in red and blue and viewed with red-blue eyeglasses. However, these pictures are unsuitable for the practical work.



## Samira – Virtual Touch At Our Fingertips

*Samira – not the mythical name of a Persian princess – but a virtual assembly process capable not only of rendering a 3D image of objects but of reproducing the tactile sensations induced by manipulations, especially shocks and friction. A brief incursion into the world of virtual reality...*

An operator manipulates the end of an articulated mechanical arm, which he moves in order to perform a complex assembly operation in a confined space. He observes the result of the manipulations on a computer screen, which displays the image in 3D. Whenever his 'virtual hand' touches a 'digital object', a command is sent to the motors of the mechanical arm, which immediately simulates actual contact and

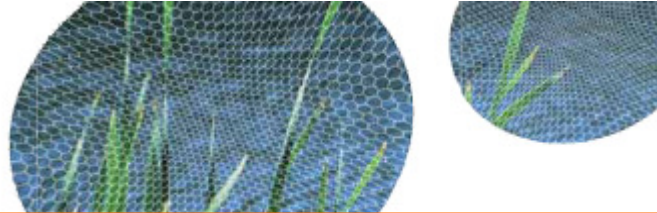
thus generates resistance felt by the operator. The operator owes this sensorial feedback to the Samira (SimulAtion de Maintenance Interactive avec Retour hAptique) system developed by the EADS Corporate Research Centre (CRC).

This feedback is made possible by the properties of the articulated mechanical arm which, thanks to slaved motors,

coupled with sensors and electronics, possesses six degrees of freedom (three in rotation, three in translation). The arm combines highly complex mechanisms and software and was developed by Haption, an industrial offshoot of the French Atomic Energy Commission (CEA).

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## Service and Feedback-Fax 0049 (0)711 27 303 110

We hope that you enjoyed this issue of the IDO:Communicate newsletter and would be pleased about your critical notes or praise. Besides we want to align the offer of the ICIDO magazine more strongly to your needs, so that we would be pleased, if you invest about 5 minutes into the answer of the questions. At the same time we give you the chance here to request further and deepening information to the addressed topics. Mark in addition simply the appropriate points.

Until the next issue—your editorial team.

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### My Feedback on IDO:Communicate

How would you like this issue of IDO:Communicate in general?

- excellent     Well Done     All right     suboptimal     Not at all

How would you mark the different aspects of IDO:Communicate?

Design      Content      Structure      Style      Pictures      Quality      Value

What did you liked most?

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What did you like least?

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What did you missed?

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### I want more information:

- Avoiding Errors**                       **Service Pack 3**
- ICDIO Consulting**                       **The Roadmap of ICIDO**
- IDO:Flexible**                               **EADS Case**

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